California State Fire Marshal

# CODE INTERPRETATION

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| Date Issued | 9/01/2005 | Interpretation # | 05-019 |
| Topic | Healy Phase II enhanced vapor recovery system | | |
| Code Section(s) | 2001 CFC Section 223 | | |
| Requested by | Tom Waller<br>Fire Marshal<br>Oxnard Fire Dept.<br>251 South C St.<br>Oxnard CA,93030 | | |

***I am requesting an interpretation of the California Fire Code with respect to the Healy Phase II Enhanced Vapor Recovery System. The Healy Phase II EVR includes a vapor processor, also known as a Clean Air Separator (CAS). The CAS is 400-gallon capacity vessel that will contain gasoline and gasoline vapors during operation. The CAS has come into question as to whether it will be regulated as an above ground storage tank (AST). My request for clarification/interpretation includes the following:***

1. ***Is the Clean Air Separator an aboveground storage tank in accordance with the California Fire Code?***

No.

2. ***If the Clean Air Separator is not an aboveground storage tank, what is it?***

There is no clear definition in the CFC however; U.L. has certified the unit as a “Vapor Processing System.”

3. ***If you call the CAS a vapor processor, or a processing vessel, what is the CFC definition of a vapor processor? Processing vessel?***

CFC Article 2, Section 223 best defines these as a “vapor processing unit”.

***4. What are the installation requirements for secondary containment, vehicle crash protection and labeling?***

There are no requirements for secondary containment. However, protection against physical damage shall be provided in accordance with Article 52, California Fire Code, Section 5202.13.3.12.

***5. Does draining of the bladder and/or tank (CAS) (see Healy Operating Instructions) amount to dispensing as defined in the CFC?***

No.

**Foot note: The intent of this footnote is for reference only and to provide clarification. It is not the intent of the State Fire Marshal to endorse any one specific product, device or methodology.**

**Description of Operation of the Healy Clean Air Separator™:**
The Healy Systems, Inc., Model 9961 Healy Clean Air Separator™ is a stand-alone, completely mechanical device that assists in controlling the gasoline vapor emissions from a gasoline dispensing facility. It consists of a 400-gallon storage vessel with integral bladder and associated valving. It is connected to the ullage space of the GDF storage tanks via the venting system of the under ground storage tanks. During normal operation of the GDF, with today's concentration of ORVR vehicles approximating 20%, the storage tank ullage space will usually operate in the "0" to negative (up to 8" WC P/V cracking pressure) pressure range. During" closed" periods of the GDF, the ullage pressure will usually begin to increase due to vapor growth inherent in the process of introducing air into the UST's. If the pressure goes slightly above atmospheric the vapor from the UST's will flow into the internal bladder. Conversely, when ORVR refueling begins and the UST pressure falls below atmospheric, the vapor internal to the bladder will be drawn back into the UST until the bladder is fully collapsed waiting for the next cycle.

The Clean Air Separator™ in over two and one half years (installed late September of 2002) of being in operation at our C.A.R.B. test site in Sacramento has been evaluated repeatedly to see if there is any liquid condensation in either the bladder or the space between the inner wall of the vessel and outer wall of the bladder. To date there has been no liquid found in either area.